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Swanson

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[54] DIFFRACTIVE TRIFOCAL INTRA-OCULAR LENS DESIGN

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[58] Field of Search 351/161; 623/4–6

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[57] ABSTRACT

An intraocular lens including a refractive/diffractive lens having an anterior surface and a posterior surface and a generally anterior posterior optical axis. At least one of the surfaces has a diffractive lens profile that is binary in phase, and produces three useful focal points. The diffractive lens profile is designed to provide three foci each containing 28.8% of the incident light, with the residual 14% of the light going into other foci. Additionally, some of the out-of-focus light of this design contributes positively to the image, and the resultant maximum image contrast is above 28.8%. This design adds clear mid-range vision, at the expense of a slight decrease in near and far vision, and the added mid-range vision makes the device less sensitive to longitudinal placement in the eye.

4 Claims, 6 Drawing Sheets